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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,937	03/09/2004	Rolf Beck	SE-20CONIV	4481

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EXAMINER

PHAM, HOA Q

ART UNIT PAPER NUMBER

2877

DATE MAILED: 07/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/796,937

Applicant(s)

BECK, ROLF

Examiner

Hoa Q. Pham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Germany on 8/28/96. It is noted, however, that applicant has not filed a certified copy of the application as required by 35 U.S.C. 119(b).

Specification

2. The continuation data should be inserted in page 1 of the specification.

Claim Rejections - 35 USC ' 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 6, 7 and 8 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The specification does not set forth how the gap widths are determined from a measured value processing in such a way that four points of intersection of the measuring circle with two edges of a gap are determined by evaluating a

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distance change on the generated measuring circle. How the two straight lines through the four points of intersection are computed? (Claim 7).

The specification does not set forth how the contour lines are carried out on the basis of distance changing patterns (claim 8). How the position of rotation of the measuring circle is computed? (claim 6).

An applicant for a United States patent is required to describe and show in detail all parts which are not well known in the art, and if they are well known in the art applicant is required to show that such parts are well known and obtainable on the market or that there is full disclosure thereof in patents or other publications. Such patents or other publication would be identified by full reference thereto.

5. Claims 1-8 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Claim 1 line 11, claim 6 line 3 and claim 7, line 4; the phrase "in such a way" is vague and indefinite.

b. Claim 2 recites the limitation "the evaluation computations" in line 2. There is insufficient antecedent basis for this limitation in the claim.

c. Claim 2 recites the limitation "the measuring location" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

d. Claim 2 recites the limitation "distance and measuring signal" in line 5. There is insufficient antecedent basis for this limitation in the claim.

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e. Claim 2 lines 5-6 is not clear, what "function" does applicant means here? What does applicant means by "the function is activated"?

f. Claim 3 recites the limitation "the optical axes" and "ray bundles" in line 1-2. There is insufficient antecedent basis for this limitation in the claim.

g. Regarding claim 6, the phrase "or the like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "or the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP ' 2173.05(d).

h. Claim 6 recites the limitation "the center axis" and "the measuring circle" in line 9. There is insufficient antecedent basis for this limitation in the claim.

i. Claim 8 is not clear, what "changing patterns" does applicant means here?

k. Claim 8 recites the limitation "the scanned geometric figure" in line 6. There is insufficient antecedent basis for this limitation in the claim.

l. Claim 10 recites the limitation "the triangulation principle" in line 7. There is insufficient antecedent basis for this limitation in the claim.

m. Claims 4-5, are dependent; therefore inherent the deficiencies of the claims on which they depend.

Claim Rejections - 35 USC ' 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakatsuka et al (5,568,246) (of record) in view of "Figure 1" of the present invention.

Regarding claims 1, 2 and 8-9, Nakatsuka et al teaches a sensor unit (10) including a displacement sensor (11) for emitting a laser beam to an object (5) to be inspected and detecting the displacement of the object by focusing the reflected light on a photoelectric transducer by using a receiving lens; an optical path converter unit (14,20) for refracting the optical path of the laser beam and the laser beam is rotated about the axial center parallel to the optical path by a flat sheet glass (14) so that the laser beam scans the object drawing a small circle (figures 3, 7, 11). Nakatsuka et al does not disclose a measuring head having transducer, reproducing unit, etc... However, such the features are known in the art as stated by application in page 17 lines 6-7 of the present specification. Those of ordinary skill in the art at the time the invention was made to replace the sensor unit of Nakatsuka et al by a measuring head as taught by PRIOR ART for the purpose of positioning or distance measurement of an object, thus increasing the speed and accuracy of the measurement.

Regarding claim 3, see figures 4 and 7a of Nakatsuka et al.

Regarding claims 4 and 7, Nakatsuka et al teaches that the displacement sensor is used to measure the position and height of the object. Nakatsuka et al does not explicitly teach that the gap widths or inclination of the surface is determined. However, It is well known in the art that the inclination of the surface or gap widths can be determined on the basis of the position measurement. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to the basic device of Nakatsuka et al for detecting the gap widths or inclination of the surface of the object if additional measurement is desired.

Regarding claim 5, Nakatsuka et al teaches that the radiation laser beam scans the object drawing a small circular trace (column 2, lines 30-37 or figure 7b). Thus, it would have been obvious to one having ordinary skill in the art to determine means distance value through the scanned circumferential line.

Regarding claim 6, see figure 12 of Nakatsuka et al for position and distance measurements.

Regarding claim 10, see figures 7a and 7b for triangulation method.

Regarding claim 11, see Prior Art (figure 1 of the present invention).

Regarding claim 12, see element 14 in figure 3 of Nakatsuka et al.

Regarding claim 13, Nakatsuka et al does not explicitly disclose a means for adjusting the optical parts; however, it would have been obvious to include in Nakatsuka et al means for adjusting the optical parts, for example, adjusting the rotating refractor 14 of Nakatsuka et al. The rationale for this modification would have been arisen from the fact that due tot the offset of the mechanism, the

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moving parts should be adjusted or corrected or calibrated. Thus, an accuracy of the measurement is obtained.

8. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolf et al (DE-3507445) (of record) in view of Nakatsuka et al.

Regarding claims 1-2 and 9-11; Wolf et al discloses an apparatus and method for distance measurement which has all the features of the present invention except for a deflector unit for deflecting the reflected ray bundle by the projection unit of the measuring head so that the measuring spot projected on the optoelectronic transducer unit is independent of a position of rotation of the measuring spot projected onto the surface relative to an optical center axis of the measuring head. However, such a feature is known in the art, for example as taught by Nakatsuka et al. Nakatsuka et al teaches a sensor unit (10) for emitting a laser beam to an object (5) to be inspected and detecting the displacement of the object by focusing the reflected light on a photoelectric transducer by using a receiving lens; an optical path converter unit (14,20) for refracting the optical path of the laser beam and the laser beam is rotated about the axial center parallel to the optical path by a flat sheet glass (14) so that the laser beam scans the object drawing a small circle (figures 3, 7, 11).

Those of ordinary skill in the art at the time the invention was made to include in Wolf et al a rotating deflector as taught by Nakasuka et al for the purpose of positioning or distance measurement of an object, thus increasing the speed and accuracy of the measurement.

Regarding claim 3, see figures 4 and 7a of Nakatsuka et al.

Regarding claims 4 and 7, Nakatsuka et al teaches that the displacement sensor is used to measure the position and height of the object. Nakatsuka et al does not explicitly teach that the gap widths or inclination of the surface is determined. However, It is well known in the art that the inclination of the surface or gap widths can be determined on the basis of the position measurement. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to the basic device of Nakatsuka et al for detecting the gap widths or inclination of the surface of the object if additional measurement is desired.

Regarding claim 5, Nakatsuka et al teaches that the radiation laser beam scans the object drawing a small circular trace (column 2, lines 30-37 or figure 7b). Thus, it would have been obvious to one having ordinary skill in the art to determine means distance value through the scanned circumferential line.

Regarding claim 6, see figure 12 of Nakatsuka et al for position and distance measurements.

Regarding claim 10, see figures 7a and 7b for triangulation method.

Regarding claim 12, see element 14 in figure 3 of Nakatsuka et al.

Regarding claim 13, Nakatsuka et al does not explicitly disclose a means for adjusting the optical parts; however, it would have been obvious to include in Nakatsuka et al means for adjusting the optical parts, for example, adjusting the rotating refractor 14 of Nakatsuka et al. The rationale for this modification would have been arisen from the fact that due tot the offset of the mechanism, the

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moving parts should be adjusted or corrected or calibrated. Thus, an accuracy of the measurement is obtained.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. These references have been cited in the parent application: Hosterman (3,589,815) discloses a non-contact measuring probe and Sisson (3,154,626) discloses a device for determining the position of a mark in a transparent film. These references have been provided in the parent application (09/725,378).

Conclusion

10. This is a continuation of applicant's earlier Application No. 10/376,122. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory

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action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoa Q. Pham whose telephone number is (571) 272-2426. The examiner can normally be reached on 7:30AM to 6 PM, Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Hoa Q. Pham
Primary Examiner
Art Unit 2877

HP

July 14, 2004